4 Upper-Air Data

Hourly averaged wind profiles were acquired by a Doppler sodar and radar wind profiler at the Carrizo Plain during CCOS. A total of 97 daily data files out of a possible 122 were acquired over the four month period by the sodar. Data were lost between June 16 through June 26 and July 10 through July 23. A total of 72 daily data files out of a possible 122 were acquired by the radar with very little data obtained during June and most of July (Table 39).

One of the major reasons for this disruption was because of the extreme heat in electronics trailer during the day. The original air conditioner was unable to sufficiently cool the trailer. Thus, the computers and electronics used to acquire the sodar and radar data often failed because of the extreme heat. This problem was eliminated when a large air conditioner was installed in late July. Another problem that caused numerous computer crashes was the initiation of the radio acoustic sounding system (RASS). The RASS is a combination of the sodar and radar working in unison to acquire temperature profiles. The sodar and radar computers were linked through an RS-232 serial line. However, because of software glitches, a digital signal sent from one computer to the other via this serial line often caused computer crashes. It was decided to disconnect these two computers from each other and turn off the RASS. In addition, the very little data acquired by the RASS was suspect or invalid.

Outliers and anomalous values from the sodar data set were manually identified and removed. Questionable data acquired by the radar were identified and removed using automatic algorithms developed by Weber and Wuertz (1991) and Weber et al. (1993).

Finally, unlike the tower stations which were set to local time (in this case Pacific Daylight Time or PDT), the sodar and radar computer clocks were set to Universal Time Coordinate (UTC). This was done to remain consistent with the other sodars and radar wind profilers deployed by other CCOS investigators. The difference between UTC and PDT is 7 hours. For example 1200 UTC is 0500 PDT.

Table 39. Available sodar and radar data files.

	Sodar				Radar			
Day	JUN	JUL	AUG	SEP	JUN	JUL	AUG	SEP
1	✔	✔	✔	✔	✘	✘	✔	✔
2	✔	✔	✔	✔	✘	✘	✓	✔
3	✔	✔	✔	✔	✘	✘	✓	✔
4	✔	✔	✔	✔	✘	✘	✔	✔
5	✔	✔	✔	✔	✘	✘	✓	✔
6	✔	✔	✔	✔	✘	✘	✓	✔
7	✔	✔	✔	✔	✘	✘	✓	✔
8	✔	✔	✔	✔	✘	✘	✓	✔
9	✔	✓	✔	✔	✘	✘	✔	✔
10	✓	✘	✔	✔	✘	✘	✔	✔
11	✓	✘	✔	✔	✘	✘	✔	✔
12	✓	✘	✔	✔	✓	✘	✓	✔
13	✓	✘	✔	✔	✓	✘	✓	✔
14	✔	✘	✔	✔	✓	✘	✓	✔
15	✔	✘	✔	✔	✔	✘	✓	✔
16	✘	✘	✔	✔	✘	✘	✔	✔
17	✘	✘	✔	✔	✘	✘	✓	✔
18	✘	✘	✔	✔	✘	✘	✓	✔
19	✘	✘	✔	✔	✘	✘	✔	✔
20	✘	✘	✔	✔	✘	✘	✔	✔
21	✘	✘	✔	✔	✘	✘	✔	✔
22	✘	✘	✔	✔	✘	✘	✓	✔
23	✘	✘	✔	✔	✘	✘	✓	✔
24	✘	✓	✔	✔	✘	✘	✔	✔
25	✘	✔	✔	✔	✘	✘	✔	✔
26	✘	✔	✔	✔	✘	✘	✔	✔
27	✓	✔	✔	✔	✓	✓	✔	✔
28	✓	✔	✔	✔	✓	✔	✔	✔
29	✔	✔	✔	✔	✘	✓	✔	✔
30	✔	✔	✔	✔	✘	✓	✔	✔
31		✔	✔			✓	✔	

✔ complete data file
✓ partial data file
✘ no available data file